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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10775,712	02/09/2004	Connie C. Liu	SEA-2845.1	3832
36521	7590	02/24/2005	EXAMINER	
MOSER, PATTERSON & SHERIDAN LLP/ SEAGATE TECHNOLOGY LLC 595 SHREWSBURY AVENUE SUITE 100 SHREWSBURY, NJ 07702			RICKMAN, HOLLY C	
			ART UNIT	PAPER NUMBER
			1773	
DATE MAILED: 02/24/2005				

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/775,712

Applicant(s)

LIU ET AL.

Examiner

Holly Rickman

Art Unit

1773

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 07 December 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-5,7-11,13 and 14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5,7-11,13-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 102

2. The rejection of claims 7-9 and 11 under 35 U.S.C. 102(e) as being anticipated by Ross et al. (US 5980997) is withdrawn in view of Applicant's amendments.

Claim Rejections - 35 USC § 102/103

3. The rejection of claims 7-9 under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ranjan et al. (US 5840394) is withdrawn in view of Applicant's amendments.

Claim Rejections - 35 USC § 103

4. The rejection of claims 1-3 under 35 U.S.C. 103(a) as being unpatentable over Ranjan et al. (US 5840394) in view of Sato et al. (US 6699601) is withdrawn in view of Applicant's amendments.
5. Claims 1-5 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ross et al. (US 5980997) in view of Sato et al. (US 6699601).

Art Unit: 1773

Ross et al. disclose a magnetic recording disk having a substrate with a sputtered layer of NiP and an electrolessly deposited layer of NiP thereon (see col. 2, lines 18-50; col. 5, lines 7-10; col. 7, lines 7-11).

The reference is silent with respect to the claimed components of the information storage system.

Sato et al. teach that it is known in the art to use a magnetic recording medium in combination with a magnetic head and actuator arm to form a functional disk drive apparatus (col. 9, lines 20-48).

It would have been obvious to one of ordinary skill in the art at the time of invention to use the magnetic head and actuator components taught by Sato et al. in combination with the magnetic recording medium taught by Ross et al. in order to provide a functional disk drive apparatus.

With respect to the claimed surface roughness(Ra) range, Ross et al. teach that it is preferred in their invention to provide a NiP surface that is smooth but in an alternative embodiment the NiP surface can be provided with "a small amount of roughness" in order to reduce stiction between the magnetic disk and the recording head (col. 3, lines 60-65). While the reference is silent with respect to the specific values of Ra that correspond to this above mentioned disclosure, it is the Examiner's position that the reference is suggestive of a range of Ra that is as low as 0Å. The reference teaches the preferred use of a smooth surface (i.e., this would ideally be 0Å) or the use of a surface having a small amount of roughness. Thus, it would have been a matter of routine experimentation for one of ordinary skill in the art to adjust the Ra of the NiP surface taught by Ross et al. to meet the disclosed surface requirements.

With respect to the limitation of claim 13, Ross et al. is silent with respect to the claimed method of determining the Ra value of the NiP surface. However, it is the Examiner's contention that the particular method used to determine the surface roughness of the claimed structure does not present a patentable distinction over the prior art because it does not affect the nature of the claimed structure or the function of that structure.

6. Claims 7-11 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ross et al. (US 5980997).

Ross et al. disclose a magnetic recording disk having a substrate with a sputtered layer of NiP and an electrolessly deposited layer of NiP thereon (see col. 2, lines 18-50; col. 5, lines 7-10; col. 7, lines 7-11).

With respect to the claimed surface roughness (Ra) range, Ross et al. teach that it is preferred in their invention to provide a NiP surface that is smooth but in an alternative embodiment the NiP surface can be provided with "a small amount of roughness" in order to reduce stiction between the magnetic disk and the recording head (col. 3, lines 60-65). While the reference is silent with respect to the specific values of Ra that correspond to this above mentioned disclosure, it is the Examiner's position that the reference is suggestive of a range of Ra that is as low as 0Å. The reference teaches the preferred use of a smooth surface (i.e., this would ideally be 0Å) or the use of a surface having a small amount of roughness. Thus, it would have been a matter of routine experimentation for one of ordinary skill in the art to adjust the Ra of the NiP surface taught by Ross et al. to meet the disclosed surface requirements.

With respect to the limitation of claim 14, Ross et al. is silent with respect to the claimed method of determining the Ra value of the NiP surface. However, it is the Examiner's contention that the particular method used to determine the surface roughness of the claimed structure does not present a patentable distinction over the prior art because it does not affect the nature of the claimed structure or the function of that structure.

Response to Arguments

7. Applicant's arguments filed 12/7/04 have been fully considered but they are not persuasive.

Applicant argues that in rejecting the claims as being unpatentable over Ross et al., the examiner failed to make a prima facie case of obviousness. Applicant maintains that the examiners rejection fails to meet the requirement that "the general conditions of a claim are disclosed in the prior art" as stated in *In re Aller*. By this, Applicant means that Ross et al. does not disclose a range of Ra values and more specifically does not disclose a range of Ra values that overlap the claimed range. Applicant argues that the laser texturing taught by Ross et al. would not necessarily result in a surface having a surface roughness within the claimed range.

Applicant's attention is directed to column, 3, lines 60-65 of Ross et al. This portion of the prior art disclosure makes a distinction between "roughness" used to lower stiction and friction and laser texturing. Laser texturing is used to form texture in the CSS zone of the disk whereas the surface "roughness" referenced above is not limited to a specific surface portion of the disk. In any case, the reference teaches the preferred use of a "smooth" surface as noted in the rejection above. It is the Examiner's contention that a "smooth" surface (especially since a

Art Unit: 1773

contrast is made to a separate embodiment having “a small amount of surface roughness”) is suggestive of 0 Angstroms in surface roughness.

Furthermore, Applicant’s arguments regarding *In re Boesch* and *In re Aller* as described above have been fully considered but are not persuasive. The Examiner maintains that Applicant’s reliance on the specific facts in *In re Boesch* and *In re Aller* are unduly limiting in the instant case. MPEP 2144.05II cites several cases in addition to these two in describing optimization of result effective variables and each of the cases has a different set of facts as it relates to the concept of “the general conditions of a claim” as described in *In re Aller*. The examiner maintains that after a parameter is determined to be a result-effective variable, one must evaluate whether determining optimum or workable ranges of that variable might be considered to be within the purview of one of ordinary skill in the art. The MPEP does not limit this evaluation process to only those cases where the prior art discloses a range of values for the claimed variable. The Examiner maintains that the prior art is sufficiently suggestive of a range of close to 0 Å that routine experimentation to determine an optimal Ra value would have been well within the purview of one of ordinary skill in the art.

Applicant further argues that the examiner has used impermissible hindsight in choosing the Ross disclosure to look to and determine an optimal surface roughness value therefrom. The Examiner respectfully disagrees. One of ordinary skill in the art would choose Ross because it teaches the same basic structure as claimed (i.e., sputtered NiP layer with electrolessly deposited NiP layer etc) and it also teaches the importance of using a smooth surface or a surface having a “small amount of roughness.” Out of the “thousands of such references” referred to by Applicant,

Art Unit: 1773

Ross et al. is significant because it discloses both the claimed structure and a motivation to adjust surface roughness.

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached on (571) 272-1535. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 1773

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'Holly Rickman', with a stylized flourish at the end.

Holly Rickman
Primary Examiner
Art Unit 1773

February 18, 2005